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| APPLICATION NO.                      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/787,222                           | 02/27/2004  | Toyotaka Yuasa       | 1021.43559X00       | 4833             |
| 20457                                | 7590        | 07/18/2007           | EXAMINER            |                  |
| ANTONELLI, TERRY, STOUT & KRAUS, LLP |             |                      | CREPEAU, JONATHAN   |                  |
| 1300 NORTH SEVENTEENTH STREET        |             |                      |                     |                  |
| SUITE 1800                           |             |                      | ART UNIT            | PAPER NUMBER     |
| ARLINGTON, VA 22209-3873             |             |                      | 1745                |                  |
| NOTIFICATION DATE                    |             | DELIVERY MODE        |                     |                  |
| 07/18/2007                           |             | ELECTRONIC           |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

officeaction@antonelli.com  
dprater@antonelli.com  
tsampson@antonelli.com

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 10/787,222      | YUASA ET AL. |
| Examiner                     | Art Unit        |              |
| Jonathan S. Crepeau          | 1745            |              |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 May 2007.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1 and 6-10 is/are pending in the application.

4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,6 and 10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/4/07.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

1. This Office action addresses claims 1 and 6-10. Claims 7-9 remain withdrawn from consideration. Claims 1, 6, and 10 are newly rejected under 35 USC 103, as necessitated by amendment. Accordingly, this action is made final.

### *Claim Rejections - 35 USC § 103*

2. Claims 1, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-85006 in view of WO 03/044881.

In the abstract, JP '006 teaches a positive electrode material comprising  $\text{LiANiMO}_2$ , where A is an alkali metal and M is one or more of Co, Mn, Cr, Fe, V, and Al. The material is in the form of primary particles coagulated into secondary particles, the secondary particles having a void percentage of 30% or less. Regarding claim 6, the mean particle size of the primary particles is 1-8 microns.

However, JP '006 does not expressly teach that the length in which the primary particles are linked on the section of the secondary particle is equivalent to 10-70% of the length of the whole periphery on the section of the primary particle, as recited in claim 1.

However, the reference would motivate the artisan to employ primary particles with relatively large portions of their surfaces touching, thereby rendering the claimed range obvious. In paragraph [0027] of the machine translation, the reference teaches that the size of the primary

particle is preferably kept large so that electrical conductivity and charge/discharge capability is kept good. Further, in [0027], it appears that the size of the grain boundary of the primary particle is advantageously kept large. The artisan would be motivated by these teachings to use primary particles having large diameters such that relatively large portions of the surfaces thereof are touching each other. Accordingly, the limitation in claim 1 that the length in which the primary particles are linked on the section of the secondary particle is equivalent to 10-70% of the length of the whole periphery on the section of the primary particle would be rendered obvious.

JP '006 further does not expressly teach that the positive electrode material comprises  $\text{Li}_a\text{Mn}_x\text{Ni}_y\text{Co}_z\text{O}_2$ , as recited in claim 1.

WO 03/044881 teaches an  $\text{Li}_x\text{Mn}_a\text{Ni}_b\text{Co}_c\text{O}_2$  material in the abstract. Example 3 in Table 1 discloses a composition falling within the subscript ranges recited in claim 1.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the  $\text{Li}_x\text{Mn}_a\text{Ni}_b\text{Co}_c\text{O}_2$  composition of WO '881 as the active material of JP '006. In the abstract, WO '881 teaches that a positive electrode and a lithium cell using this material have a high energy density and excellent charging/discharging cycle performance. Accordingly, the artisan would be motivated to use the  $\text{Li}_x\text{Mn}_a\text{Ni}_b\text{Co}_c\text{O}_2$  composition of WO '881 as the active material of JP '006.

***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1745  
July 12, 2007